

The question arises whether the metabolic differences between spherocytes and normal erythrocytes summarized by Pranker (1959) are primary or whether they follow from the defect of lipid synthesis described above. We favour the latter interpretation, since alterations in sodium and phosphate ion transport could well result from an abnormal membrane containing a higher proportion of a surface-active component (lysophosphatidyl ethanolamine) than usual. If the abnormality in phosphatide synthesis were secondary it would be remarkable if only a single pair of components were affected (lysophosphatidyl and phosphatidyl ethanolamine), all other phosphatides being present in identical proportions. We therefore conclude that the most likely primary genetic defect in hereditary spherocytosis is in the final stage of synthesis of phosphatidyl ethanolamine, all other observed differences in spherocytes being a consequence of this metabolic lesion. The lesion is shown by leucocytes synthesizing phosphatides *in vitro* and would probably be manifested in many other bodily organs *in vivo*, especially the spleen.

Summary

The phosphatides and their fatty acids from blood cells of normal and hereditary spherocytic subjects have been analysed. Incorporation of ^{32}P -orthophosphate into phosphatides of normal and abnormal blood cells incubated *in vitro* has also been studied. There is no limitation of overall phospholipid synthesis or turnover, or difference from normal of fatty-acid synthesis, in hereditary spherocytosis. However, the spherocytic cells have a significantly higher proportion of lysophosphatidyl ethanolamine, and a significantly lower proportion of phosphatidyl ethanolamine, than normal cells. Incubation of normal cells in serum to which lysophosphatidyl ethanolamine had been added led to a significant amount of spherizing. It is concluded that the primary genetically controlled abnormality in hereditary spherocytosis probably lies in a partial block in the enzymic system for conversion of lysophosphatidyl ethanolamine to phosphatidyl ethanolamine. All other observed differences between normal and spherocytic cells could be secondary to such a defect.

We are indebted to Dr. T. Norris, Archway Hospital, London, for access to cases under his care, and to Dr. T. Freeman for assistance in collecting material.

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ROLE OF THE PLASTIC SURGEON AND PSYCHIATRIST IN THE SURGERY OF APPEARANCE*

BY

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Plastic surgeons and psychiatrists share a joint awareness of the inseparably close relationship which links facial appearance, bodily proportion, and the overall function and structure of human beings to their morale and personal identification, including their sexual fantasies, hopes, and fears. Men and women are themselves innately conscious of this aspect of the inevitable interdependence of mind and body, and it is often their search for happiness or peace of mind, at least as much as considerations of physical comfort or convenience, which lead them to seek bodily reconstruction of any kind.

The implications of this are surely that we must pay attention to the state of mind as well as to the bodily structure of all who seek our aid in the field of plastic surgery. Only in this way will we recognize the opportunities, as well as the limitations, which may be involved when an individual seeks a structural change against a setting of emotional disturbance.

We submit that there is a need for an agreed classification in basic terms of this problem of the reactions to disfigurement. It is a problem which does in fact impinge upon nearly every plastic operation, and has long been recognized as of importance by every plastic surgeon. This recognition has largely concerned the occasional major complications of a plastic operation in which latent psychiatric disorder has been overtly and explosively released, for example, by an operation on the nose.

TABLE I.—Non-Psychotic Reactions to Disfigurement

Mental Health	Degree of Objective Disability or Disfigurement	Disposal	Reactions
(1) Normal	Slight to grave	Plastic repair	Normal, but depend on: standard of result; I.Q. of patient; and life situation of patient
(2) Emotional instability; immature personality	May not even exceed normally acceptable limits	Psychiatric assessment re indications for surgery advisable in these cases. Decision should be based on (1) practicability of acceptable improvement; (2) patient's predicted capacity to withstand failure	Plastic result can be good in selected cases. Occasionally a plastic repair can contribute to overall recovery of morale
(3) Grave neurosis	Illness fastened on purely marginal disfigurement or change in anatomy		

Classifications of Reactions.—The simplest and most practical classification is to divide the reactions into (1) non-psychotic (or sane) reactions (Table I), of which there seem to be three main groups; and (II) psychotic reactions (or insane reactions), of which it is possible to distinguish two main groups (Table II).

*Based on a joint communication to the International Congress of Plastic Surgery at the Royal College of Surgeons of England on July 17, 1959.

TABLE II.—*Psychotic Reactions to Disfigurement*

Mental Health	Degree of Objective Disability or Disfigurement	Disposal	Reactions
(1) Psychotic, but with delusions or depressive reaction centred upon actually existent structural deformity, disfigurement, or disability	Actual deformity or distortion of a feature	Very careful psychiatric assessment of capacity to withstand failure or do well with the change. Plastic revision to be undertaken only in relatively stable phase of illness	Individual delusions may be relieved by plastic revision. Psychotic illness remains
(2) Psychotic illness characterized by delusions about normal anatomy	Nil. Disability is purely subjective and consists of pathological preoccupation with normal sexual features or nose, ears, or general appearance	Psychiatric care. Plastic intervention contra-indicated	Early or late exacerbation of psychotic reaction possible after plastic revision

I. Non-psychotic Reactions

Group 1.—This group includes people of normal personality and mental health who suffer from congenital or acquired deformities or disabilities susceptible to plastic correction or improvement. Psychological effects of these primary disabilities can be regarded as purely secondary, and likely to improve with the overall improvement effected by plastic surgery. It is this group for which psychiatric consultation is, generally speaking, unnecessary, although it may on occasion be desirable. An example of patients belonging to this category is shown in Fig. 1. The deformity of this patient's nose was attributed to trauma in early youth. A standard reduction led to a straightforward reaction with a happy and satisfied patient.

Group 2.—This group consists of patients with immature, disturbed, or damaged personalities, or overt neurotic illness who also suffer from disabilities or deformities as in group 1 above. Indications for plastic surgery here must be agreed between psychiatrist and plastic surgeon, although surgical indications can normally be accepted as paramount in planning treatment. The individual reaction of such patients may vary widely, and careful psychiatric assessment is always advisable. Examples of this group are shown

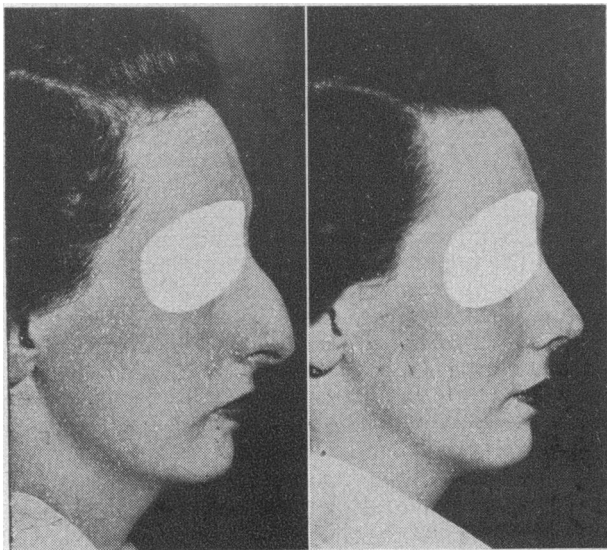


FIG. 1.—Non-psychotic reactions, group 1. Girl of normal personality and mental health unduly disturbed about a normal feature but one whose correction is practicable and gives complete relief, with advantages to her personality.

in Figs. 2 and 3. Fig. 2 shows an ex-paratrooper who had been labelled as a paranoid schizophrenic, because of his worry about his bat-ears, and told to avoid surgery. After a straightforward plastic reduction of his ears he was relieved of his worries, and his adapta-



FIG. 2.—Non-psychotic reactions, group 3. Paranoid schizophrenic obsessed by the unsightliness of protruding ears. Standard reduction has relieved him of his worries, and his adaptation to life is now normal.

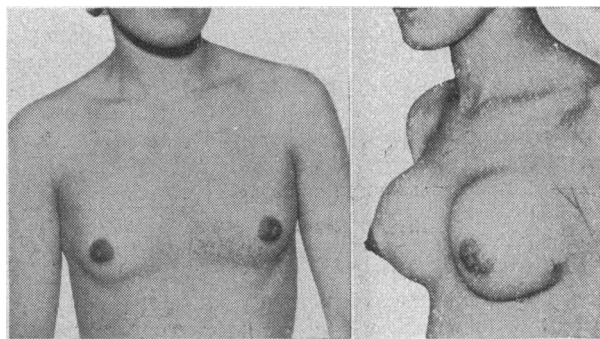


FIG. 3.—Non-psychotic reactions, group 2. A girl considered to be a case of chronic anxiety state with a background of hysteria and psychopathic personality. An augmentation mammoplasty has greatly restored her confidence, general contentment, and adaptation to her way of life.

tion to life is now entirely normal. Similarly the bosom is often a site of undue concern in girls, some of whom may be of immature, disturbed, or damaged personalities. Fig. 3 shows an example. The girl was regarded as displaying an anxiety state against the background of a hysterical personality. A standard augmentation mammoplasty has greatly increased her confidence, her general contentment, and her adaptation to life.

Group 3.—The patients in this group have personality disorder or emotional illness as in group 2, but focus a large proportion of their overt anxiety or distress upon marginal disabilities or deformities, not necessarily otherwise likely to be regarded as requiring plastic surgery. These cases have to be considered carefully on their merits, but a proportion of them can benefit from plastic surgery as part of the overall therapeutic plan. Others may in fact require psychotherapy to have reached a stage of at least relative success, with considerable modification of symptoms, before specific surgery can stand its best chance.

II. Psychotic Reactions

Group 1.—This group consists of psychotic patients who suffer objectively significant disabilities or deformi-

ties, and who stand, to this extent, to benefit from their correction. Combined psychiatric and surgical assessment in these cases must depend on three factors: (a) the degree to which plastic surgery can provide reasonable amelioration or success from a technical standpoint; (b) the extent to which the patient is capable of a realistic appreciation of the risks and possibilities, and is affected by the existent state; and (c) the patient's particular capacity to tolerate failure of plastic surgery, as assessed by psychiatric examination and rapport.

It is important to insist that any plastic intervention that may be advised for the psychotic patient who has a deformed or abnormal feature should only be undertaken during a period of stabilization and never during acute upsets. It is this group of patients with unrecognized psychoses who may often come to the plastic surgeon asking, for example, for a change in shape or size of their nose, and who can provide some of the most unhappy complications from the psychiatric point of view. Indeed, both suicidal attempts and assaults upon the plastic surgeon have been recorded. It is also our experience that the technique of the nasal or other repair is seldom perfect in one of these major psychotic breakdowns, although it may very well be described as of an adequate standard. An example of this group is discussed later.

Group 2.—This group consists of psychotic patients who have in fact either no objective disability or deformity at all, or who have invested it, whatever the plastic problem may be, with actual hallucinatory or delusional components. Surgery is nearly always dangerous in these patients, but, even so, exceptions can be made occasionally as a result of carefully combined clinical assessment by surgeon and psychiatrist.

Even the first category of group 1, that of virtually normal reactions, may contain patients whose emotional attitude to their existent state or to the outcome of an operation may need particular study if disappointment or despair is to be avoided. A recent illustrative case under our joint care was that of a woman who had suffered painful and disabling oedema with considerable deformity of the upper arm due to lymphatic obstruction after radical mastectomy. The possibility of relief through partial transplantation of the remaining breast to provide a pedicle draining the affected area had to be postponed, virtually at the last minute, because it became evident that the patient had alarming fantasies of grotesque mutilation arising out of her apprehension of the very nature of the operation. Despite the ordinary patient and careful explanation undertaken by the family doctor and the plastic surgeon concerned, she had neither confided nor surrendered her apprehensions. A single psychotherapeutic interview succeeded in restoring relative equilibrium and morale, but the outcome of a perfectly sound operation without this essential preliminary of establishing emotional communication might well have been disastrous.

Psychotic illness, as exemplified by a breach or failure of the patients' contact with reality or interpretation of their own situation and experience, need not be an absolute contraindication, even when involving relatively grotesque delusions. But if the delusions are themselves the primary basis of the request for surgery, careful and sympathetic examination will sometimes disclose specific contraindications otherwise unapparent. Contrasting cases are briefly cited.

The first was that of a woman with a large nose (Fig. 4), itself justifying plastic correction, but linked in her mind with the delusion that the proportions of this organ suggested to all who saw her that she had an equally large penis and was in fact a man masquerading as a woman. Because she was able to acknowledge quite frankly that she would be happier with a smaller nose, even if nothing else were to change as a result, the calculated risk was



FIG. 4.—Psychotic reactions, group 2. This patient was a chronic paranoid schizophrenic. She was obsessed by the fact that she believed her large nose indicated to the public generally that she had a penis. Pre-operative picture. Standard nasal reduction relieved her of this obsession although her paranoia persists.

accepted and plastic correction provided. The result was over a year's relief of subjective distress, and subsidence of the specific delusions which had accompanied her preoccupation with her nose. Her paranoid schizophrenia subsequently relapsed, as such an illness sometimes will; but the form of her delusions had changed, and in retrospect nothing but gain appears to have been the outcome of surgery in this case.

The second case was that of a structurally normal man, aged 55, who entreated "a change-of-sex operation." He based this on a conviction that he was in fact a woman inexplicably imprisoned within a man's body. In the course of a single patient and sympathetic interview he disclosed that his greatest hope from surgery was that, having become a woman, he would then get married and have a baby. His problem was essentially psychiatric, and surgery would have been catastrophic.

The important factors in examining such patients are, firstly, the achievement of rapport; secondly, the technical proficiency of the psychiatric assessment; and, thirdly, the recognition of the relationship between the underlying pathology and the patient's subjective complaints. The essential criteria for endorsing surgery in cases where there is an established structural indication for it, are the degree to which the patient's overall appreciation of the possibilities and limitations of the procedure are consonant with reality, no matter how disturbed he or she may otherwise be.

We have attempted to break away from a rigidly conservative approach to this problem, and for carefully selected patients have included plastic revisions as a part of a combined programme of psychiatric and surgical treatment of psychoneurotic and psychotic states. The need for the most careful selection in most cases is apparent when it is realized that a wrong decision can include such complications as suicide, homicidal attack, and acute psychotic breakdown. But one reason for an active rather than a conservative policy for these most carefully selected cases is that these very complications may sometimes also follow a refusal to proceed to treatment.

We end as we began: both psychiatrist and plastic surgeon have in one sense a common aim. They seek to recognize and to appreciate the true human need, and potential, for restoration of structure, or function, or of relationship, which may be buried beneath the mask of deformity or the distortion inflicted by

congenital disability, trauma, or any other catastrophe. In one case the emphasis may be on the shape of tissue, in the other upon the subjective experience of the particular patient; on form and contour, or feelings and confidence; but, fundamentally, both these aspects are part of the whole human being and deserve the shared and balanced attention of experts in the respective fields.

Summary

A plea is made for more active co-operation between plastic surgeon and psychiatrist. A provisional and basic classification of mental reactions to disfigurement is provided. An attempt is made to outline the groups which are particularly amenable to combined plastic and psychiatric treatment. While the traditionally cautious or conservative approach to the problem has been avoided, we emphasize the dangers that can follow imperfect or inadequate selection of psychiatric patients for plastic surgery.

+ PLANT DERMATITIS* -

BY

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Despite the increasing industrialization of Britain, plants and their products remain among the more frequent causes of dermatitis. *Primula obconica* was introduced to cultivation in 1882, and its capacity to induce dermatitis was very soon recognized. During the next few years a flood of articles and letters convicted this attractive plant of many crimes, including murder (Brown, 1906), and it has largely retained its villainous reputation. This notoriety has had interesting consequences. The fact that many other plants, common in Europe in the wild or in cultivation, often cause dermatitis tends to be ignored by patient and doctor alike, whilst the primula, even when innocent, is banished without trial. The near relatives of *P. obconica*, notably the popular *P. malacoides*, are often forced to share its banishment, although the majority appear to be incapable of causing dermatitis. On the credit side, *P. obconica* was used for many of the earlier investigations which laid the foundations of our knowledge of the mechanisms of contact sensitization.

Fashions in horticulture change. The years since the second world war have seen a steady growth in the popularity of the "house plants," plants displaying a degree of tolerance of the half shade, smoky atmosphere, and inconstant temperature of the average living-room. The small greenhouse, too, is increasing rapidly in numbers and providing accommodation for hundreds of less tolerant species. There are therefore few persons in this country, whether town or country dwellers, who do not regularly or occasionally come into contact with many different plants. The countryman and the gardener face, in addition, frequent exposure to "weeds." The non-botanist is often surprised to learn that the wild flora of Britain is constantly changing. Plants accidentally introduced become established and gradually extend their range. Among recent arrivals which are contriving successfully to spread are certain species which enjoy

an unpleasant reputation as causes of dermatitis in their North American homeland.

This article attempts to provide an account of the problem of plant dermatitis as it exists in Britain at the present time. New and potential hazards are described, and the value of certain elementary botanical knowledge in predicting the presence of the capacity to produce dermatitis is emphasized. Woods, many of which can cause dermatitis in the carpenter, are not considered here.

Varieties of Plant Dermatitis

Primary Irritant Dermatitis.—The plant may exert a directly injurious action on the skin. The stinging hairs of the nettle offer an obvious example. Some of the spurges (*Euphorbia* sp.) may irritate sensitive skin, and children chewing the leaves or stems of certain buttercups may complain of burning and blistering. In general, however, primary irritants among the British flora are of little clinical significance and will not be further considered.

Sensitization Dermatitis.—Most cases of plant dermatitis are the result of an allergic sensitivity. Such sensitivity is not inborn but is dependent on immunological changes induced by previous contact with the same plant or sometimes with a closely related species. Certain plants can be regarded as potent sensitizers in that brief contact may induce sensitivity in a considerable proportion of those exposed. Most of the plants with which we are here concerned have a relatively low sensitizing capacity in that prolonged or frequent contact induces sensitivity in only a very few of those exposed. Sensitivity may develop within seven to ten days of the first contact or only after many years of exposure, and no plant can be exonerated from responsibility for dermatitis solely on the grounds that the patient has long handled it with impunity.

Phytophotodermatitis.—Certain plants induce a distinctive reaction when skin against which their leaves or stems are crushed is subsequently exposed to light. All those exposed in sufficient degree are susceptible, as direct photosensitization and not an allergic mechanism is involved.

The Antigenic Substances

In only a few instances has the chemical nature of the antigenic substances in plants been established. The most fully investigated are those of poison ivy (*Rhus radicans*), a serious cause of dermatitis in the United States and Canada, fortunately unlikely to be encountered in Britain outside botanical gardens. Poison ivy contains four antigenic components (Kligman, 1958), all of which are catechols. The antigenic substances in this plant and in related species are phenols, catechols, or resorcinols with a 15 carbon atom chain, usually unsaturated, in a position para to one of the hydroxyl groups. The antigenic substance of *P. obconica* has been isolated from the glandular hairs which clothe leaves and stems and has been named "primin." The formula of primin has been established as $C_{14}H_{18}O_3$, but its precise chemical structure is uncertain. Primin, like the hydroxyphenols of the poison ivy family, is a constituent of the oleoresin fraction of the plant. The antigen in some important members of the daisy family (Compositae) has also been identified with this fraction (Shelmire, 1939).

The oleoresin fraction consists of a mixture of substances, including essential oils, terpenes, resins,

*Read in the Section of Dermatology at the Annual Meeting of the British Medical Association, Torquay, 1960.